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Influence of Packaging and Labeling on Sales of Interior Florida Grapefruit

a Sales Test

U.S. DEPARTMENT OF AGRICULTURE
ECONOMIC RESEARCH SERVICE

PREFACE

This report describes research conducted in 1964 and 1965 to determine the influence of packaging and labeling on retail sales of fresh grapefruit. The 1964 phase of the research involved fruit from Florida's Indian River section. Detailed findings from this portion were reported in ERS 212, Fresh Grapefruit Packaged and Labeled Indian River - A Sales Test, January 1965.

Specific results from the 1965 test, which used grapefruit from the interior region of Florida, are reported here and comparisons are drawn between the 1964 and 1965 tests.

Both studies were conducted as part of the Economic Research Service's program to aid in the distribution of farm products by identifying more effective merchandising practices. The studies were requested and partly financed by the Florida Citrus Commission. Dr. William E. Black, Director of Economic Research for the Commission, aided in developing plans for the study and setting up the experimental work. Seald-Sweet Packers, Inc., an affiliate of the Florida Citrus Exchange, a farmer cooperative located at Tampa, Fla., obtained and packaged the test fruit. Jerome R. Kanavy of the cooperative's South Kearny, N. J., plant had responsibility for packaging the fruit to test requirements.

The Grand Union Company cooperated in the research by providing 16 test stores and modifying its normal operations to accommodate test conditions. Grand Union officials who were especially helpful in this regard were B. W. Winters and Donald Fittizzi.

The program of merchandising research of which this study was a part is under the general direction of Robert E. Frye of the Market Development Branch, Marketing Economics Division, Economic Research Service.

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SUMMARY

Marsh seedless grapefruit from the interior producing region of Florida are purchased in considerably larger volume when packaged than when displayed loose, according to a test conducted in 1965. The sales response for packaged fruit was essentially the same whether the polyethylene bag was plain or imprinted with a brand label. Displays of grapefruit in bags bearing the "Seald-Sweet" label produced 48 percent more sales volume, and displays in plain bags produced 46 percent more, than bulk or loose displays.

Determining the effect of bagging and labeling on the sales of the fruit was the objective of a controlled test that was conducted in selected supermarkets in the Paterson, N. J., area in the spring of 1965. The test was identical to one conducted for Indian River grapefruit in 1964 and involved some of the same test stores.

The test specifications provided that 96-size grapefruit be displayed (1) loose, (2) in Seald-Sweet labeled bags, (3) in plain bags, and (4) in plain bags and loose in combination. Displaying techniques were rotated among 16 test stores to provide that each store displayed each type of packaging and loose fruit for 1 week and for only 1 week during a 4-week period. The test fruit was priced at 6 for 59¢, whether bagged or sold loose.

The Seald-Sweet bag was associated with 12.3 pounds of Marsh seedless sales per 100 customers and the combination display (plain bags and loose), with an equal amount. Sales of test grapefruit were 12.1 pounds per 100 customers when the fruit was stocked in plain bags only. Displays of loose fruit produced sales of only 8.3 pounds per 100 customers, indicating a definite and significant advantage to bagging the test fruit.

Total grapefruit sales (including nontest grapefruit) in the 16 sample stores were significantly greater when the 96-size fruit was bagged. This response resulted from the added tonnage of bagged test fruit, since sales per store per week of nontest grapefruit (all displayed unbagged) declined when the test fruit was displayed bagged.

As in the 1964 test, sales that could be attributed to bagging were additional sales for citrus, as the sales of oranges were unaffected by packaged grapefruit.



INFLUENCE OF PACKAGING AND LABELING ON SALES OF
INTERIOR FLORIDA GRAPEFRUIT
A Sales Test

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Efficiency has been one of the prime reasons for the trend toward packaging of produce in consumer units. In fact, ease in handling and reduction in spoilage, rather than added sales, have prompted packaging of many items. Products that sell in large quantities have been especially favored for merchandising in this manner. As a consequence, there is a temptation to associate greater sales volume with packaging, when the item may have been packaged primarily because of the large quantities sold.

Grapefruit appears to be a good example of this kind of evolution in packaging. Considerable quantities of grapefruit move to the consumer in retail packages. Yet, until 1964 when the Florida Citrus Commission initiated research in cooperation with the Economic Research Service, there was little evidence that packaging did indeed sell more grapefruit. Even less was known about sales advantage, if any, that resulted from labeling the bag with area of origin or brand.

The 1964 research compared grapefruit sales from loose displays with identical fruit in plain and in labeled bags. It revealed that 96-size pink grapefruit from the Indian River section on the east coast of Florida sold 28 percent more volume when offered to the consumer in polyethylene bags of 6 each than when displayed unpackaged. The more dramatic finding from this test, however, was the significantly greater sales that resulted when the bag bore the identification "Florigold, Seald-Sweet, Indian River, Pink Seedless Grapefruit."

Displays made up of bags under this identification sold 63 percent more fruit than the loose displays and significantly more than displays of the plain (unlabeled) bags, even though the fruit was priced 6 for 69 cents in both cases. ^{3/}

It was this finding on the sales advantage of identification that gave rise to the second study and to this report. Some trade members readily accepted the results attributed to this label, but they cautioned against associating this finding with grapefruit from areas less well known for

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^{3/} Brown, S. E. and Pape, E. C., Jr. Fresh Grapefruit Packaged and Labeled Indian River - A Sales Test. U. S. Dept. Agr. ERS 212, January 1965.

quality fruit than Indian River. Specifically, they maintained that the sales response for similiarly identified fruit from the interior of Florida would not be as pronounced.

The test was, therefore, replicated to determine if sales of bagged grapefruit under some other than the Indian River label would also be greater than sales of grapefruit in unlabeled bags.

PROCEDURE

Fruit selected for this test was again 96-size, but Marsh Seedless (white) grapefruit from the interior producing area of Florida was selected for the test. The grapefruit were displayed in the same manner as before, that is, either (1) loose only, (2) in plain polyethylene bags, (3) in plain bags and loose in combination, or (4) in labeled bags. The label used was "Seald-Sweet," in 1-inch-high gold letters on a blue burst, $5\frac{1}{2}$ by $3\frac{1}{2}$ inches, set on a gold grid background similiar to the one used for Indian River fruit. Like the Indian River label, this label was in current use by Seald-Sweet Sales, Inc., Tampa, Fla. The four ways of displaying 96-size fruit were rotated among the stores and among the 4 test weeks. This arrangement served to equalize the store and time influences on sales by ensuring that each method of packaging would appear once in each store and an equal number of times each week. Thus, the sales influences peculiar to time periods and individual stores were separated from any comparison among sales from loose versus packaged displays. The four types of displays are shown in figure 1.

A paper insert in the plain bags or small letters on the labeled bags identified the fruit as a product of Seald-Sweet Sales, Inc., Tampa, Fla. The fruit sold 6 for 59¢ regardless of whether it was offered loose or in bags.

The 16 test stores, all owned by the same company, were in the Paterson, N. J., area; 9 of them had been used for the 1964 test.

The manner in which all grapefruit and oranges were displayed and priced was recorded each Thursday or Friday. Oranges and nontest grapefruit were merchandised in the test stores in the normal manner with the exceptions that no other 96-size grapefruit could be displayed, and other nontest grapefruit could not be merchandised in bags. The practice followed by many retailers is to offer the smaller grapefruit in bags, while the larger fruit is displayed loose.

Test fruit had to be displayed in the same location each week. The uniformity of nontest displays among stores was aided by the company policy of prescribing weekly the relative display location of produce items.

The sales effectiveness of the three methods of the packaged versus loose displays was evaluated on the basis of weekly sales. Volume sold was measured by the standard audit method: beginning inventory plus receipts, plus or minus transfer, less inventory at the end of the week. Spoilage was discounted as a problem since the fruit was bagged locally and the displays were changed periodically during the test. Likewise, the test fruit was from the same



Test fruit displayed in the Seald-Sweet bag.



Test fruit displayed in the plain bag only.



Test fruit displayed both loose and in the plain bag.



Test fruit displayed loose only (control display).

Figure 1

lot, whether displayed loose or in bags.

The dates when the test was conducted and the general design of the experiment are given in table 1. Two weeks during the period from February to April were skipped as test weeks. One of these weeks the cooperator featured bagged grapefruit in a newspaper advertisement. All test stores had to stock the fruit advertised and could not conform to the test design during this week.

RESULTS

Packaging showed a definite sales advantage for the test fruit, and, in turn, for all grapefruit sales. Almost 50 percent more test grapefruit was sold per 100 customers when it was displayed in bags than when loose. More specifically, the Seald-Sweet bag was associated with 12.3 pounds per 100 customers and the plain bag with 12.1 pounds, compared with 8.3 pounds when the test fruit was displayed loose (table 2). This difference of 0.2 pound between sales of the two bags was not sufficient to indicate that the labeled bag was more effective than the plain one in generating sales. The plain bag may have cut into nontest grapefruit sales more than the Seald-Sweet bag since nontest grapefruit showed a greater decline in average sales per store per week when this bag was used for the test fruit (table 3). Whatever may have been the competitive relationship between the test fruit in the plain bag and other fruit, the added sales from the use of either bag were sufficient to increase total grapefruit volume significantly (table 4).

There was indication that some fruit from loose grapefruit displays was repeatedly passed over by customers, with the result that loose displays deteriorated in appearance after a few days. The fact that bagging prevented this rejection may have contributed to a better sales response to bagged fruit.

The combination display of loose fruit and plain bags accounted for the same level of sales per 100 customers as the Seald-Sweet bag--12.3 pounds.

Orange sales were not reduced when bagged grapefruit was sold. This means that the added grapefruit sales associated with bagging were not at the expense of orange sales.

The consumer activity in the sample stores, as measured by customer count or dollar volume, did not favor one method of packaging over another. The levels of these indicators of consumer activity did not differ significantly, regardless of whether the test grapefruit was displayed loose or in bags (table 5). The consistency of these indices of consumer demand confirms the efficiency of the Latin square design and the representativeness of the sample in equalizing the influences peculiar to time periods and stores.

Table 1.--Experimental design used to test effects of packaging and labeling on fresh grapefruit sales, Paterson, N. J.,
4 weeks, February - April 1965

Period	Replication I, sample stores--				Replication II, sample stores--				Replication III, sample stores--				Replication IV, sample stores--			
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
February 21-27.....	D	C	A	B	:	:	:	:	:	:	:	:	:	:	:	:
March 7-13.....	B	A	D	C	:	:	:	:	:	:	:	:	:	:	:	:
March 14-20.....	A	B	C	D	:	:	:	:	:	:	:	:	:	:	:	:
March 28-April 3..	C	D	B	A	:	:	:	:	:	:	:	:	:	:	:	:
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:

Treatments:

- A. Test grapefruit displayed under the Seald-Sweet identification and no test fruit loose.
- B. Test grapefruit displayed in a plain bag and no test fruit loose.
- C. Test grapefruit displayed in a plain bag and also displayed loose.
- D. Test grapefruit displayed loose only.

Table 2.--Sales of test grapefruit in 16 retail food stores, Paterson, N. J.,
4 weeks, February - April 1965

Test grapefruit display	Sales	
	Per 100	Percentage
	customers	of "loose only" sales
	--Pounds--	--Percent--
Loose Only.....	8.3	100
Seald-Sweet Bags.....	<u>1/</u> 12.3	148
Plain Bags and Loose.....	<u>1/</u> 12.3	148
Plain Bags Only.....	<u>1/</u> 12.1	146

1/ Significantly greater than sales from the loose display with
99 in 100 probability.

Table 3.--Sales of nontest grapefruit during varied packaging of test fruit
in 16 retail food stores, Paterson, N. J., 4 weeks, February-April 1965

Test grapefruit display	Sales of nontest fruit	
	Per 100	As percentage of sales
	customers	from loose test display
	--Pounds--	--Percent--
Loose Only.....	7.8	100
Seald-Sweet Bags.....	6.4	82
Plain Bags and Loose.....	7.2	92
Plain Bags Only.....	<u>1/</u> 5.8	-74

1/ Significantly different from sales when test fruit was displayed
loose, with 95 in 100 probability.

Table 4.--Sales of all grapefruit during varied packaging of test fruit in
16 retail food stores, Paterson, N. J., 4 weeks, February-April 1965

Test grapefruit display	Sales during test period	
	Per 100	As percentage of sales
	customers	from loose test display
	--Pounds--	--Percent--
Loose Only.....	16.1	100
Seald-Sweet Bags.....	<u>1/</u> 18.7	116
Plain Bags and Loose.....	<u>1/</u> 19.5	121
Plain Bags Only.....	<u>1/</u> 17.9	111

1/ Significantly greater than sales from the loose display with
99 in 100 probability.

Table 5.--Index of number of customers, value of produce sales, value of total store sales by different methods of displaying test grapefruit, Paterson, N. J., 4 weeks February - April 1965 (Loose display test sales = 100)

Manner of displaying test grapefruit	Customer count	Total produce dollar sales	Total store dollar sales
		-- Percent ---	
Seald-Sweet Bag.....	100.7	100.0	99.1
Plain Bag.....	100.8	97.4	99.5
Combination.....	99.4	100.2	100.3
Loose.....	100.0	100.0	100.0

IMPLICATIONS

The two packaging tests--the 1964 test of Indian River grapefruit and the 1965 test of interior fruit--provide conclusive answers to certain questions but leave some other questions about grapefruit packaging and labeling unanswered. The results of the tests indicate:

1. Pink seedless, 96-size grapefruit from Indian River (1964 test) or Marsh Seedless from the interior of Florida (1965 test) sold in considerably more quantity when displayed in bags than when offered to the consumer loose, when the price and the fruit were the same.

2. The sales advantage from packaging 96-size fruit was reflected in plus sales for citrus.

3. Additional sales increases to those observed when grapefruit was displayed in unlabeled bags resulted when the bags carried the identification "Florigold, Seald-Sweet--Indian River, pink seedless grapefruit" even though the individual fruit was stamped "Florigold, Indian River" and the display carried a channel card, "pink," whether the fruit was offered loose or in plain bags (1964 test). However, the sales increase when Marsh Seedless grapefruit from the interior producing area of Florida was bagged under the Seald-Sweet label was not statistically greater than when the fruit was offered in an unlabeled polyethylene bag that carried only a paper insert to identify the packer as Seald-Sweet Sales, Inc. (1965 test). But in the 1965 test, sales of nontest grapefruit were significantly less per 100 customers when the test fruit was displayed in plain bags than when it was loose. However, this did not keep total grapefruit sales from being significantly increased when bags were used, labeled or unlabeled.

These research tests were not designed to answer certain other questions that may be inferred from the results obtained. For example, opinions will differ on the relative importance of the wording on the package. Some persons will maintain that the customer regards the Indian River grapefruit highly and needs to be reassured by the package that the fruit is Indian River. Others feel that customers prefer pink fruit and can be sure they are getting pink only if the bag carries this distinction. Others may contend that sales of

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Marsh Seedless, or interior, grapefruit would have been even greater in the 1965 test sales if the labeled bag had carried the additional wording "seedless."

The tests were conducted with the labeled bags that are in current use in the industry. Consequently, the results can be applied only to these particular bags and the wording on them. It is reasonable to assume that additional information, such as the color of the fruit or whether it is seedless, would serve to build consumer's confidence and aid them in making the vital decision to purchase the product. Where it is practical and economical to provide this information on the bag, it should be the objective of grapefruit shippers and handlers to do so.

These studies dealt only with a short-term situation; no conclusion can be drawn concerning what sales would be after the labels receive longer use and additional promotional activities. Findings do indicate that at this time the Indian River grapefruit enjoys greater consumer acceptance than interior grapefruit under the Seald-Sweet label in the test market area.

